

Database of Steel and Alloy (Marochnik)

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Characteristics for grade D1 (Д1).

Grade :	D1 (Д1)(1110)
Classification :	Aluminium wrought alloys
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Chemical composition in % for grade D1 (Д1)

Fe	Si	Mn	Cr	Ti	Al	Cu	Mg	Zn	Impurity	-
max 0.7	0.2 - 0.8	0.4 - 1	max 0.1	max 0.15	91.7 - 95.5	3.5 - 4.5	0.4 - 0.8	max 0.25	other, each 0.05; all 0.15	Ti+Zr < 0.2

Comment: Al is a basis; the percentage of Al is given approximately.

Mechanical properties under T=20°C for grade D1 (Д1)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Pipe, GOST 18482-79			335-375	195-215	10-12			
Bar, GOST 21488-97			195	110	12			
Bar, GOST 21488-97			355-375	195-215	10-12			Hardening and ageing
Bar, GOST 51834-2001			420	275	10			Hardening and ageing
Bar, GOST 51834-2001			375	215	14			Hardening and ageing
Band, GOST 13726-97			335	185	12			
Profile, GOST 18591-91			337					Hardening and ageing
Profile, GOST 8617-81			333-363	186-216	10-12			
Plate, GOST 17232-99			315-370	195-215	5-11			Hardening and ageing

Brinell hardness for D1 (Д1) ,	HB 10 ⁻¹ = 95 MPa
Brinell hardness for D1 (Д1) , annealed	HB 10 ⁻¹ = 45 MPa

Physical properties for grade D1 (Д1)

T	E 10 ⁻⁵	α 10 ⁶	λ	ρ	C	R 10 ⁹
Grade	MPa	1/Grade	Watt/(m·Grade)	kg/m ³	J/(kg·Grade)	Ohm·m
20	0.72			2800		54
100		22.9	130		922	

Equivalent steels for grade D1 (D1)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	France	England	European	Italy	Poland	Czechia	Austria	Switzerland	Inter
-	DIN, WNr	JIS	AFNOR	BS	EN	UNI	PN	CSN	ONORM	SNV	ISO
A92017 AA2017	3.1325 AlCuMg1	2017	2017A AU4G2017A	H14- 150A	ENAW-2017A ENAW- AlCu4MgSi(A)	AlCu4MgMnSi P- AlCu4MgMn	AlCuMg1	424201	AlCuMg1	Al3.5Cu0.5Mg	2017 AlCu4MgSi AlCuMgSi

Specification :**Mechanical properties :**

- σ_B - Tensile strength , [MPa]
 σ_T - Yield stress , [MPa]
 δ_5 - Specific elongation at fracture , [%]
 ψ - Reduction of area , [%]
KCU - Impact strength , [kJ / m²]
HB - Brinell hardness , [MPa]

Physical properties :

- T** - Test temperature , [Grade]
E - Young modulus , [MPa]
 α - Coefficient of linear expansion (range 20° - T) , [1/Grade]
 λ - Thermal (heat) condition coefficient , [Watt/(m·Grade)]
 ρ - Density , [kg/m³]
C - Specific heat (range 20° - T) , [J/(kg·Grade)]
R - Electrical resistance , [Ohm·m]

Database of steels and alloys (Marochnik) contains information about chemical composition and properties more than 2500 steels and alloys (stainless steel, alloy steel, carbon steel, structural steel, tool steel, cast iron, aluminum alloy, titanium alloy, copper alloy, nickel alloy, magnesium alloy and others).
 Helpfull for specialists in grade technology, structural engineer, mechanical engineer, metallurgy and metal trader

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